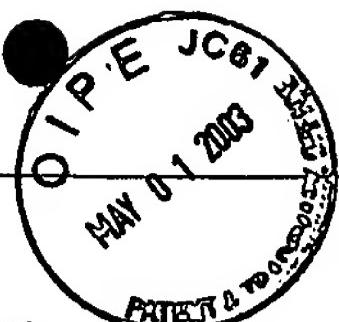


RECEIVED



SEQUENCE LISTING

MAY 06 2003

<110> Qi, Xiaoyang

TECH CENTER 1600/240

<120> Fusogenic Properties of Saposin C and Related Proteins and Polypeptides for Application to Transmembrane Drug Delivery Systems

<130> 10872/0474352

<140> US 09/780,438

<141> 2000-02-11

<150> US 60/181,754

<151> 2000-02-11

<160> 6

<170> PatentIn version 3.1

<210> 1

<211> 40

<212> PRT

<213> Homo sapiens

<400> 1

Ser Asp Val Tyr Cys Glu Val Cys Glu Phe Leu Val Lys Glu Val Thr
1 5 10 15

Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu Asp Ala Phe
20 25 30

Asp Lys Met Cys Ser Lys Leu Pro
35 40

<210> 2

<211> 38

<212> PRT

<213> Homo sapiens

<400> 2

Val Tyr Cys Glu Val Cys Glu Phe Leu Val Lys Glu Val Thr Lys Leu
1 5 10 15

Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu Asp Ala Phe Asp Lys
20 25 30

Met Cys Ser Lys Leu Pro
35

<210> 3
<211> 38
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Where the amino acid located at 1 is a hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Where the amino acid located at 2 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Where the amino acid located at 5 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (8)..(10)
<223> Where the amino acids located at 8-10 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Where the amino acid located at 13 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Where the amino acid located at 14 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (16)..(17)
<223> Where the amino acids located at 16 and 17 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Where the amino acid located at 22 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (26)..(27)
<223> Where the amino acids located at 26 and 27 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (29)..(30)
<223> Where the amino acids located at 29 and 30 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (33)..(33)
<223> Where the amino acid located at 33 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (35)..(35)
<223> Where the amino acid located at 35 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (37)..(38)
<223> Where the amino acids located at 37 and 38 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<400> 3

Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
1 5 10 15

Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys
20 25 30

Xaa Cys Xaa Lys Xaa Xaa
35

<210> 4
<211> 39
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(2)
<223> Where the amino acids located at 1 and 2 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Where the amino acid located at 3 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Where the amino acid located at 6 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (9)..(11)
<223> Where the amino acids located at 9-11 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Where the amino acid located at 14 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Where the amino acid located at 15 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (17)..(18)
<223> Where the amino acids located at 17 and 18 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (23)..(23)
<223> Where the amino acid located 23 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (27)..(28)
<223> Where the amino acids located at 27 and 28 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (30)..(31)
<223> Where the amino acids located at 30 and 31 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> Where the amino acid located at 34 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (36)..(36)
<223> Where the amino acid located at 36 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (38)..(39)
<223> Where the amino acids located at 38 and 39 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<400> 4

Xaa Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys
1 5 10 15

Xaa Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp
20 25 30

Lys Xaa Cys Xaa Lys Xaa Xaa
35

<210> 5

<211> 38
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Where the amino acid located at 1 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Where the amino acid located at 2 is an uncharged polar amino
acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Where the amino acid located at 5 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (8)..(10)
<223> Where the amino acids located at 8-10 are hydrophobic amino
acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Where the amino acid located at 13 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Where the amino acid located at 14 is an uncharged polar amino
acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (16)..(17)
<223> Where the amino acids located at 16 and 17 are hydrophobic amino
acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Where the amino acid located at 22 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (26)..(27)
<223> Where the amino acids located at 26 and 27 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (29)..(30)
<223> Where the amino acids located at 29 and 30 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (33)..(33)
<223> Where the amino acid located at 33 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (35)..(35)
<223> Where the amino acid located at 35 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (37)..(38)
<223> Where the amino acids located at 37 and 38 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<400> 5

Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
1 5 10 15

Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys
20 25 30

Xaa Cys Xaa Lys Xaa Xaa
35

<210> 6
<211> 38
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Where the amino acid located at 1 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Where the amino acid located at 2 is an uncharged polar amino
acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Where the amino acid located at 5 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (8)..(10)
<223> Where the amino acids located at 8-10 are hydrophobic amino
acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Where the amino acid located at 13 is a hydrophobic amino acid,
including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Where the amino acid located at 14 is an uncharged polar amino
acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (16)..(17)
<223> Where the amino acids located at 16 and 17 are hydrophobic amino
acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Where the amino acid located at 22 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (26)..(27)
<223> Where the amino acids located at 26 and 27 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (29)..(30)
<223> Where the amino acids located at 29 and 30 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (33)..(33)
<223> Where the amino acid located at 33 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<220>
<221> MISC_FEATURE
<222> (35)..(35)
<223> Where the amino acid located at 35 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

<220>
<221> MISC_FEATURE
<222> (37)..(38)
<223> Where the amino acids located at 37 and 38 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

<400> 6

Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
1 5 10 15

Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys
20 25 30

Xaa Cys Xaa Lys Xaa Xaa
35